

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 21

UNITED STATES PATENT AND TRADEMARK OFFICE

**MAILED**

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

DEC 16 2003

PAT. & T.M. OFFICE  
BOARD OF PATENT APPEALS  
AND INTERFERENCES

*Ex parte* MONTE BRUCE WILSON

Appeal No. 2004-0219  
Application 09/830,187

ON BRIEF

Before GARRIS, WARREN and OWENS, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

*DECISION ON APPEAL*

This appeal is from the final rejection of claims 1-7, 11-13 and 15. Subsequent to the final rejection, claims 1, 4 and 6 were canceled.<sup>1</sup> Claims 8-10 stand allowed and claim 14 stands objected to as dependent upon a rejected claim.

---

<sup>1</sup> The amendment canceling claims 1, 4 and 6 (filed March 26, 2003, paper no. 12) has been approved by the examiner for entry but has not been clerically entered.

Appeal No. 2004-0219  
Application 09/830,187

*THE INVENTION*

The appellant claims a containerized refrigerant product comprising a pressurized cylinder containing a uniformly homogeneous liquid phase composition comprising a non-chlorofluorocarbon refrigerant and a UV fluorescent dye pre-dissolved in a solvent for the dye. Claim 13 is illustrative:

13. A containerized refrigerant product comprising,  
a pressurized cylinder, and

a liquefied refrigerant composition disposed in said cylinder, said composition comprising in combination a non-CFC refrigerant and a UV fluorescent dye pre-dissolved in a solvent for said dye, wherein said solvent is other than the refrigerant or a refrigeration system lubricant, whereby said refrigerant, dye and solvent comprise a uniformly homogenous composition in the liquid phase within said cylinder.

*THE REFERENCES*

Parekh	4,758,366	Jul. 19, 1988
Henry	5,421,192	Jun. 6, 1995
Desai et al. (WO '150) (PCT application)	WO 98/54150	Dec. 3, 1998

Appeal No. 2004-0219  
Application 09/830,187

*THE REJECTIONS*

Claims 2, 3, 5, 7, 11-13 and 15 stand rejected under 35 U.S.C. § 102(b) as anticipated by Henry or Parekh,<sup>2</sup> and under 35 U.S.C. § 103 as obvious over WO '150.<sup>3</sup>

*OPINION*

We reverse the aforementioned rejections and remand the application to the examiner. We need to address only claim 13, which is the sole independent claim.

*Rejection over Henry*

Henry discloses a method for detecting leaks in a refrigeration system containing a refrigerant which can be a non-CFC refrigerant, comprising adding to the refrigeration system a leak detection composition comprising a mixture of a refrigeration system lubricant and a naphthalimide fluorescent dye (col. 2, lines 9-29; col. 2, line 68 - col. 3, line 5; col. 3, lines 6-22). The dye can be solubilized in a solvent as

---

<sup>2</sup> Claims 13 and 15 are included in the statement of the rejection over Henry in the final rejection but not in the examiner's answer. Because claim 13 is the only independent claim, this omission appears to be inadvertent. Accordingly, we consider claims 13 and 15 to be included in this rejection.

<sup>3</sup> The examiner has withdrawn rejections of claims 2, 3, 5, 7, 11-13 and 15 under 35 U.S.C. § 103 over Henry or Parekh (answer, page 2).

a concentrate which is compatible with the refrigeration lubricant (col. 3, lines 23-28). Henry teaches that the dye/solvent concentrate is formulated for optimum lubricant/dye compatibility at elevated temperatures and does not alter the refrigerant lubricant viscosity, lubrication, and system materials compatibility as determined by the sealed tube method (col. 3, lines 29-34; col. 3, lines 25-28). This teaching indicates homogeneity of the liquid phase mixture of dye, solvent, refrigerant and refrigeration lubricant.<sup>4</sup>

Regarding the appellant's claim requirement that the refrigerant and solubilized dye are a containerized refrigeration product in a pressurized cylinder, the examiner argues that "both pipes and compressors, essential parts of refrigerating systems, are cylindrical" (answer, page 3), and that "[a] condensation vessel may be reasonably inferred as being present, and this also reads on applicant's recitation of a cylinder, in the sense that a pressure vessel is broadly referred to as a cylinder. See

---

<sup>4</sup> The appellant indicates that the term "uniformly homogeneous composition" in claim 13 does not require complete miscibility of the solvent in the refrigerant (specification, page 11).

also the bottom paragraph of p. 4, of the specification, which equates storage vessels and cylinders generally" (answer, page 4).<sup>5</sup>

During patent prosecution, claims are to be given their broadest reasonable interpretation consistent with the specification, as the claim language would have been read by one of ordinary skill in the art in view of the specification and prior art. See *In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989); *In re Sneed*, 710 F.2d 1544, 1548, 218 USPQ 385, 388 (Fed. Cir. 1983); *In re Herz*, 537 F.2d 549, 551, 190 USPQ 461, 463 (CCPA 1976); *In re Okuzawa*, 537 F.2d 545, 548, 190 USPQ 464, 466 (CCPA 1976). Limitations, however, are not to be read from the specification into the claims. See *In re Prater*, 415 F.2d 1393, 1405, 162 USPQ 541, 551 (CCPA 1969).

The appellant's specification discloses that refrigerant conventionally is supplied by wholesalers in pressure vessels commonly referred to as "gas cylinders" which actually are nearly full of liquid refrigerant in equilibrium with a small ullage

---

<sup>5</sup> This portion of the specification states: "The present invention is based on the discovery that small but effective quantities of known fluorescent dyes or other diagnostic compositions may remain permanently in suspension or solution in the liquid refrigerant when stored in pressurised [sic] storage vessels (e.g. cylinders) long term."

Appeal No. 2004-0219  
Application 09/830,187

volume of refrigerant vapor (pages 7-8). The specification states that "[t]he present invention contemplates that a wholesaler or manufacturer may incorporate an effective amount of dye stuff into the refrigerant while filling the said gas cylinders for delivery to the system manufacturer or service provider, to enable the latter persons to charge the system with refrigerant in a normal manner, to thereafter render it unnecessary for a service provider to add the dye composition separately when placing gas in a system or adopt special procedures to detect leaks", and that "the invention further consists in a method of filling a gas cylinder with an admixture of liquid refrigerant and an effective amount of a diagnostic dye, comprising the step of continuously injecting a minor flow of a dye into a filler pipe through which a major flow of liquid refrigerant is being fed into a cylinder being filled" (page 8). The appellant also refers to pressurized cylinders as storage vessels (specification, page 4).

Thus, the broadest reasonable interpretation of "pressurized cylinder" in view of the appellant's specification is that it is a pressurized storage cylinder, not a cylindrical component of a refrigeration system. Likewise, the broadest reasonable interpretation of "containerized refrigerant product" in view of

Appeal No. 2004-0219  
Application 09/830,187

the appellant's specification is a refrigeration product in a storage container, not a refrigeration product contained in a refrigeration system.

"Anticipation requires that every limitation of the claim in issue be disclosed, either expressly or under principles of inherency, in a single prior art reference." *Corning Glass Works v. Sumitomo Electric*, 868 F.2d 1251, 1255-56, 9 USPQ2d 1962, 1965 (Fed. Cir. 1989). Because the examiner has not explained where Henry discloses a containerized refrigeration product and a pressurized cylinder, as those terms are properly construed in view of the appellant's specification, the examiner has not carried the burden of establishing a *prima facie* case of anticipation of the claimed invention over Henry. Accordingly, we reverse the rejection over this reference.

*Rejection over Parekh*

Parekh discloses a leak detectable refrigeration liquid composition comprising A) a refrigeration liquid selected from 1) a group of polyhalogenated hydrocarbon refrigerants including non-CFC refrigerants, 2) a refrigeration oil, or 3) a mixture of the refrigerant and oil, and B) a fluorescent dye or solution of the fluorescent dye in a solvent, wherein the fluorescent dye or solution is soluble in the refrigeration liquid (col. 3,

lines 18-25; col. 7, lines 10-66). In three examples wherein the dye is not dissolved in a solvent, a high pressure metal can contains a CFC refrigerant, a refrigeration oil and a dye (col. 6, line 14 - col. 7, line 3).

The examiner argues that "[a] condensation vessel may be reasonably inferred as being present, and this reads on applicant's recitation of a cylinder, in the sense that a pressure vessel is broadly referred to as a cylinder. In addition, refrigeration working fluids circulate through pipes, which are cylindrical, as are compressors, which are essential to the refrigeration function" (answer, page 4).

As discussed above regarding the rejection over Henry, the broadest reasonable interpretation of "pressurized cylinder" in view of the appellant's specification does not include a cylindrical part of a refrigeration system, and "containerized refrigerant product" does not include refrigerant contained in a refrigeration system. Hence, the examiner has not adequately explained where each limitation of the appellant's claim 13 is disclosed, expressly or inherently, in Parekh. The examiner, therefore, has not carried the burden of establishing a *prima facie* case of anticipation of the appellant's claimed invention

Appeal No. 2004-0219  
Application 09/830,187

over that reference. Consequently, we reverse the rejection over Parekh.

*Rejection over WO '150*

WO '150 discloses a fluorescent leak detection dye for refrigeration systems (page 1, lines 8-9; page 3, lines 14-16). The dye can be diluted with a solvent (page 5, lines 13-15). The dye preferably is used in a refrigerant lubricant and is readily miscible therewith (page 6, line 16; page 7, lines 14-15). The lubricant preferably is fully miscible and compatible with the refrigerant (page 6, lines 16 and 20-24).

The examiner argues that "[t]he crux of the issue is whether or not a refrigeration system meets the limitations of a 'pressurized cylinder'" (answer, page 7). As discussed above regarding the rejections over Henry and Parekh, it does not do so. Accordingly, we reverse the rejection over WO '150.

*Remand*

We remand the application to the examiner for the examiner and the appellant to address on the record whether, in view of the following considerations, the appellant's claims are unpatentable over Henry or WO '150, in view of admitted prior art, and are unpatentable over Parekh based upon different rationale than that advanced by the examiner.

*Henry and WO '150*

As discussed above regarding the rejections over Henry and WO '150, these references do not disclose a containerized refrigeration product or a pressurized cylinder. However, in the "background art" section of the appellant's specification (page 3) the appellant states that "[a]ttempts have been made to incorporate the dye material into the refrigerant in its pressurised [sic] storage cylinder as a permanent means of visual identification of refrigerant leakage from the gassed or regassed refrigeration system but previous attempts have been unsuccessful due primarily to chemical instability or insolubility." The examiner and the appellant should address whether these attempts were prior art attempts or were attempts by the appellant. If they were prior art attempts, then these attempts indicate that one of ordinary skill in the art would have been motivated to store the Henry or WO '150 dye, solvent, lubricant and refrigerant in a pressurized cylinder.

For a *prima facie* case of obviousness to be established, the applied prior art must be such that it would have provided one of ordinary skill in the art with both a motivation to carry out the claimed invention and a reasonable expectation of success in doing so. See *In re Vaeck*, 947 F.2d 488, 493, 20 USPQ2d 1438,

Appeal No. 2004-0219  
Application 09/830,187

1442 (Fed. Cir. 1991); *In re O'Farrell*, 853 F.2d 894, 902, 7 USPQ2d 1673, 1680 (Fed. Cir. 1988).

If the attempts to store dye and refrigerant in a pressurized cylinder were prior art attempts, the examiner and the appellant should address whether Henry's teaching that naphthalimide dyes have excellent thermal and oxidation stability, and Henry's indication (as discussed above) that the dye, solvent, lubricant and refrigerant form a homogeneous mixture, as that term is used by the appellant, would have provided one of ordinary skill in the art with a reasonable expectation of success in storing Henry's naphthalimide dye, solvent, lubricant and refrigerant in a pressurized cylinder and, therefore, would have rendered the appellant's claimed invention *prima facie* obvious to one of ordinary skill in the art. Also, the examiner and the appellant should address whether the teachings in WO'150 that the dye is readily miscible with the refrigerant lubricant (page 6, line 16; page 7, lines 14-15) and that the refrigerant lubricant preferably is fully miscible and compatible with the refrigerant (page 6, lines 16 and 20-24) would have provided one of ordinary skill in the art with a reasonable expectation of success in storing the WO '150 dye, solvent, lubricant and refrigerant in a pressurized cylinder and,

Appeal No. 2004-0219  
Application 09/830,187

consequently, would have rendered the appellant's claimed invention *prima facie* obvious to one of ordinary skill in the art.

*Parekh*

Parekh discloses 1) polyhalogenated hydrocarbon refrigerants, some of which are non-CFC refrigerants (col. 7, lines 14-50), 2) a fluorescent dye which can be used alone or in a solvent (col. 7, lines 58-66), and 3) a high pressure metal can containing a fluorescent dye (which has not been dissolved in a solvent) and a CFC refrigerant (col. 6, line 14 - col. 7, line 3). The examiner and the appellant should address whether, based upon these disclosures, the appellant's claimed invention is unpatentable under 35 U.S.C. § 102(b) or 103.<sup>6</sup>

---

<sup>6</sup> In appropriate circumstances, an alternative rejection under 35 U.S.C. § 102 or 103 is proper. See *Manual of Patent Examining Procedure* § 706.02(m) (8<sup>th</sup> ed., rev. 1, Feb. 2003).

Appeal No. 2004-0219  
Application 09/830,187

*OPINION*

The rejections of claims 2, 3, 5, 7, 11-13 and 15 under 35 U.S.C. § 102(b) over Henry or Parekh, and under 35 U.S.C. § 103 over WO '150, are reversed. The application is remanded to the examiner.

*REVERSED and REMANDED*

*Bradley R. Garris*  
BRADLEY R. GARRIS )  
Administrative Patent Judge )  
  
*Charles F. Warren*  
CHARLES F. WARREN ) BOARD OF PATENT  
Administrative Patent Judge )  
  
*Terry J. Owens*  
TERRY J. OWENS ) APPEALS AND  
Administrative Patent Judge ) INTERFERENCES  
)  
)  
)

TJO/ki

Appeal No. 2004-0219  
Application 09/830,187

Sughrue, Mion, Zinn, Macpeak & Seas  
2100 Pennsylvania Avenue NW  
Washington, DC 20037